

RECOMBINANT FUSION PROTEINS WITH HIGH AFFINITY BINDING TO GOLD AND APPLICATIONS THEREOF

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ABSTRACT OF THE DISCLOSURE

The present invention provides a method to firmly attach any polypeptide to a gold surface regardless of its intrinsic gold-binding properties. The method describes the production of recombinant fusion proteins consisting of polypeptides of interest and a
10 high affinity gold binding peptide consisting of 1 to 7 repeats of a unique amino acid sequence. By this method, many biologically active polypeptides lacking intrinsic gold-binding properties can be firmly attached to gold surfaces. The disclosure includes evidence that fusion proteins containing the gold-binding sequences provide superior stability and activity compared to similar molecules lacking the tag when used to
15 construct biosensors. The invention provides a method that is a significant improvement over existing chemical and physical adsorption protocols to attach polypeptides to gold and, therefore, can provide benefits to many applications utilizing gold.

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